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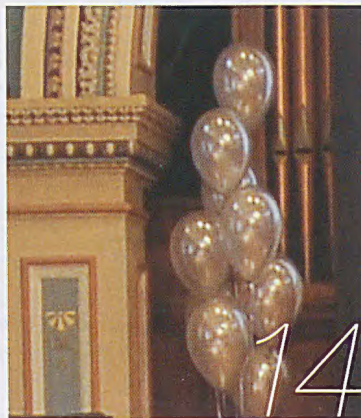
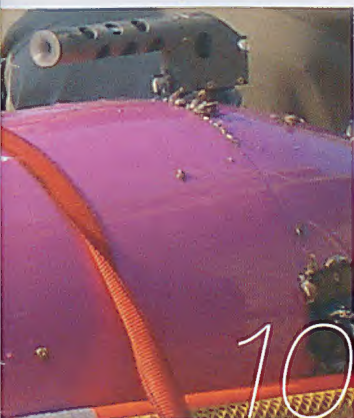
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Cover picture

Lake, Rauer Group. Courtesy Frederique Olivier



Editorial

It is exciting to have more details of Mawson Centenary events to reveal to you in this edition. Thanks to Paul Cullen, Cultural Events Manager for Antarctic Tasmania, and to Caroline Webber from the National Archives office in Canberra for keeping us up to date.

There have been several Antarctic and Southern Ocean related conferences in Hobart over the last quarter, as well as the Hobart City Council's reception to launch this year's Antarctic season. All these events reinforce Hobart's status as the most comprehensive Gateway to Antarctica

Recently, I have been working with other members of the Tasmanian Polar Network's Committee to develop a new Strategic Plan, and it

is interesting to see to what extent the objectives of previous plans have been achieved, as well. I hope all TPN members read the information provided in the latest Antarctic, Sub-Antarctic and Southern Ocean Business Census and ensure key points are included in the next Plan.

I wish everyone in the Antarctic community a safe and happy Christmas break.

Anthea Wallhead

Editor, Ice Breaker



A combination of light and frozen sea water gives a greenish tinge to this iceberg in the waters between Casey and Davis Bases in Antarctica, 18 February 2008. Photograph: BAREND BECKER. Photo from the 2011 Australian Weather Calendar, produced by the Bureau of Meteorology.

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David Bartlett

...Hobart has become such a vital port of call before Antarctica.

I recently joined the Lord Mayor Rob Valentine and the Alderman of the Hobart City Council to celebrate the opening of the Antarctic season and Hobart's connection with the Antarctic. Hobart is truly Australia's Antarctic capital. It is the departure point for scores of expeditions to this amazing place where we can learn so much about our planet, its environment and its history.

The night celebrated the contribution of many men and women who undertake and support science of global significance that takes place in Antarctica, so many of whom work and live in Tasmania. Many of us have a relative or close friend who has spent time down south, as scientists, chefs, engineers, station leaders or tradespeople. It is because of their work that Tasmania is nationally and internationally recognised as a centre for Antarctic, sub-Antarctic and climate change research and development. That is unsurprising, given Tasmania's 200-year history of supporting voyagers to Antarctica.

We are understandably fascinated with this vast continent, with its unique environment, its evocative scenery and its crucial place in the wellbeing of our planet. People have been embarking from the world's most southerly cities to visit the frozen continent since Captain Thaddeus Bellingshausen, a Russian naval officer, ventured into the Antarctic circle in the Vostok and Mirny saw the continent of Antarctica on January 27th 1820 for the first time.

Bellingshausen described what he saw as "an icefield covered with small hillocks". He was more complimentary than James Cook who, whilst he never saw land, came across icebergs with deposits of rocks and concluded that a southern continent existed and declared "the world will derive no benefit from it".

How fortunate we are today that Cook was wrong and that Hobart has become such a vital port of call before Antarctica.

Nowadays Tasmania is proud to be home to the Australian Antarctic program, headquarters for much of east Antarctica and Southern Ocean science logistics and expertise and base for a number of Antarctic world-class research programs. With Hobart as home to international secretariats, such as the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and the Agreement on the Conservation of Albatrosses and Petrels (ACAP), our state gains many social and economic benefits.

We know the Antarctic sector is important to the Tasmanian economy. It currently generates over \$150 million in revenue for the state and directly employs about 750 people. The Antarctic, Science and Research areas are key priorities in the Tasmanian Economic Development Plan. Antarctic Tasmania is also currently undertaking an Antarctic Sector Development Plan so that we can see the Antarctic science and research sector grow and attract world-class organisations and international Antarctic programs to base their operations in our state.

In 2011-12, we will be celebrating Tasmania's enduring heritage of Antarctic endeavour during the Antarctic Centennial Year. December 2011 will mark the historic 100-year anniversary of Douglas Mawson's historic Australian 1911-1914 voyage. The Centennial Year will also highlight the importance of the city of Hobart as the place where Roald Amundsen made his announcement that he was the first man to reach the South Pole.

History continues to be created up to the present day, as Hobart saw the first passenger flight to the Antarctic in 2008.

Collaboration between all levels of government and the Tasmanian Polar Network is critical if we are to promote Hobart as an important Antarctic gateway city. Congratulations to Hobart City Council on its initiative to celebrate the Antarctic season's opening. It was an honour to join with them and the people of Hobart to wish the expeditioners the best of weather and luck for the 2010-11 season.

David Bartlett

Premier of Tasmania

Minister for Innovation, Science and Technology



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Michael Ferguson

...easy accessibility to Antarctica should not be taken for granted

Speak aloud the word "Antarctic" and you rouse romance and adventure and history in the hearts of most Tasmanians. Even those who claim no great expertise seem to recognise its significance and sense its opportunities, and that's no bad thing. Science has done its job.

Institutions and communities are increasingly drawn to study the Antarctic and its opportunities in tourism, geology, biology, climate science and environmental understanding.

They continue the line of frontier scientists that began with Cook and Ross, and moved into the "Heroic Age" of exploration and discovery with Scott, Shackleton and our own Douglas Mawson. One hundred years on and the expeditions and discoveries are richer and more significant than ever.

Nowhere else in the world do we find such a range of organisms and fossils. Its ice is a vast atmospheric library. Its inhospitable ways have served as its walls of protection from heavy human footsteps.

But as more knowledge is discovered and developed, anyone who has understood the lifecycle of past scientific discoveries will expect that more and more scientific disciplines will see Antarctica as their own laboratory. Less men in white coats; more coats of orange and black worn by women and men from every curious society on Earth.

Most lay people, including myself, have obtained most of their own sketchy knowledge of Antarctica not from personal experience, field trips, scientific journals or even classrooms. No, they have obtained their knowledge through pictures flashed up in hour-long television documentaries, two-minute television news stories and stunning features in coffee table magazines.

Without exception these all stress the need to tread sensitively in an ecosystem; to preserve the built heritage of past explorers; to honour the cooperative work of nations.

Australia claims 42 per cent of the continent of Antarctica as its territory - almost 6 million square kilometres - and in just the life of our own federation, we have built a long and proud heritage in working to discover, understand and protect the region we gently call our own.

During the Menzies Liberal Government in the 1950's, Federal Minister for External Affairs and the CSIRO Richard Casey really revved up Australia's scientific love affair with the Antarctic. Of course, to maintain a credible case in claiming the territory, Menzies and Casey knew that they had to demonstrate practical steps to build Australia's reputation as explorer, innovator and genuine protector. This led to the establishment of Mawson Station and Davis Station during this innovative and disciplined term.

Built on the efforts of earlier successive governments, the Howard Government locked in Hobart's claim as the pre-eminent gateway to Antarctica with the establishment of the Antarctic Airlink. The \$46.3 million investment has dramatically changed summer season travel to the Antarctic by offering a flexible transport option. The new airlink plane made its first landing on the 4 km, sculpted-ice runway near Casey station in late 2007. Scientists are now spared two weeks rough sailing from Hobart in favour of a four-hour flight.

This infrastructure has already made a significant contribution to the economic, scientific and social gravitas of Tasmania. It will certainly prove to be a key factor in any future success of Prof Jonathon West's innovation strategy - recently adopted by the Tasmanian Government as its own.

Thanks to all these factors, Hobart has become one of the international capitals for Antarctic and marine research. Organisations including the CSIRO and the University of Tasmania, have been working closely together to combine their expertise in marine science to undertake globally important research. The Institute for Marine and Antarctic Studies' founders must ensure that their massive investment brings real results: measured by breakthroughs not floorspace; enabled by cooperation not takeover. In this regard it is my fervent hope that IMAS will not disregard the significant contribution that the Australian Maritime College in Northern Tasmania is in a position to offer - if it is embraced.

Tasmania's close proximity and easy accessibility to Antarctica should not be taken for granted. Continuing investment in the sciences remains essential to ongoing protection of the region; and perhaps protection of the planet if the climate secrets of the Antarctic can be unlocked.

Scientists are not always thought of as "creative" types. But I believe that creativity is at the heart of the sciences. At least, it's right at the heart of the work of science's greatest successes - and I taught this in my classroom.

So here's to Science: By investing prudently, growing an education culture and by understanding the real value of collaboration in research we can reinforce Australia's love affair with this frosty sanctuary. Success will ensure that discoveries flow over into popular culture, and with that comes the dividend of public loyalty and support for continued government and research community investments.

Michael Ferguson MP

Shadow Minister for Education and Skills, Shadow Minister for Innovation, Science and Technology



Peta Sugden

The Australian delegation was impressive to watch...

The terrible tragedy of the deaths of four French Antarctic research team members recently highlights the dangers of expeditions and the courage of all expeditioners who work in the extreme Antarctic conditions. On behalf of all of the Antarctic Tasmania team I offer our sincerest sympathies and condolences to the families who lost loved ones and to the IPEV team. The determination of moving forward despite these tragic events were exemplified by the French team who, after only a short time back in Tasmania, have left again to continue the vital research being conducted there.

These sentiments and condolences were also expressed at the recent CCAMLR meeting which I had the pleasure of attending as part of the Australian delegation. This was my first CCAMLR meeting and it was a fascinating and educative experience to see this part of the Antarctic Treaty System implemented and how the objectives of conservation and rational use are managed. The Australian delegation was impressive to watch and their years of experience were very evident.

The Antarctic Centennial Year (ACY) planning is progressing well with the Antarctic Centennial Advisory Group chaired by Sir Guy Green providing advice and guidance on the events.

Plans are well underway for the 3rd International Forum on the Sub-Antarctic to be held next year. The forum entitled The future of the Sub-Antarctic region: its global significance and value will be held at CCAMLR Headquarters in Hobart on 1 and 2 August 2011. The Sub-Antarctic Forum is a biennial event and the only one of its type in the world.

The Steering Committee – also chaired by Sir Guy Green – is working closely with Antarctic Tasmania to leverage Tasmania's influence in developing a hub of expertise in sub-Antarctic management, policy and science. The event's principal funder is the Department of Economic Development, Tourism and the Arts. P & O has signed on as our major sponsor for the event and we have other minor sponsors including IMAS. The program is currently being finalised with both national and international speakers attending. It is expected that about 80 – 100 people will attend.

Another key focus at the moment is the Antarctic Sector Development Plan. As many of you would be aware, the development of the plan is well underway. Australian consulting company AECgroup has been appointed to undertake two related but separate projects.

Part A is a cost-benefit analysis, and economic and social impact assessment for the first stage of the Hobart: a world-class, liveable waterfront city initiative. This first stage primarily focuses on the redevelopment of the port and the further development of the Hobart international airport. The outcome of Part A will be a submission for federal funding under the Infrastructure Australia initiative.

Part B will be a detailed report outlining recommendations for the Tasmanian Government to facilitate the growth of the Antarctic, Sub-Antarctic and Southern Ocean sector, with a primary focus on attracting international investment, strengthening the gateway capability and maximising opportunities for industry growth and employment.

I look forward to sharing the recommendations for the sector in the next edition of Ice Breaker.

Peta Sugden

Director, Antarctic Tasmania, Science and Research



Elephant Seal

Length: 3-6.5m
Weight: 680-2400 kg
Lifespan: 14 years

Seals come ashore to breed and moult on islands off the coast of California and Mexico. While males fight for dominance, females give birth and suckle calves for four weeks, before mating again.



Leopard Seal

Length: 2.7-3.7m
Weight: 275-450 kg
Lifespan: about 25 years

Mating occurs at sea during December and seals, including some yearlings and juveniles, continue to arrive at breeding sites in January and February. Females first mate at 3 years old.



Weddell Seal

Length: 2.5-3.2m
Weight: 400-450 kg
Lifespan: up to 18 years

Births and mating occur in December and like Weddell seals, implanting of the fertilised egg into the womb is delayed until January. Newly independent pups start catching small fish and krill.



Crabeater Seal

Length: 2.4m-2.6m
Weight: 200-300 kg
Lifespan: over 30 years

Seals gather in the Ross Sea and west of Graham Land when the pack ice shrinks from January to March. Adults moult in January when their coats fade to off-white and are replaced by darker fur.

Summer



John Brennan

...the new season represents an opportunity to renew our strategic plan...

Everyone is raving about how well the Antarctic season opened with the inaugural Antarctic reception hosted by the Lord Mayor Alderman Rob Valentine and Co. Well done Hobart City Council and thank you to all behind the scenes and those who participated.

As I write this article there is an event at the forefront of my mind that overshadows the great sense of excitement and enthusiasm which was evident upon the evening of the Antarctic Reception. The tragic loss of four French Antarctic expeditioners, late in October, has deeply saddened the Tasmanian Antarctic community. There are enough stressors to cope with when travelling south, into what at times can be an unpredictable and harsh environment, without having to endure the loss of fellow expeditioners.

What I have witnessed in terms of cooperation and rallying between different parties, in response to

providing a suitable support for the French expeditioners returning to Tasmania, has been nothing short of touching. The TPN has offered support where it possibly can and our friends within the French Antarctic program can rely upon Tasmania for support.

I guess in times of need one realises that the Tasmanian community is very generous and caring. We have a grass roots, back to basics, can do attitude. If there can be one positive to come of this terrible incident it will be the galvanizing and strengthening of the sector. It is indeed good to know that we can count on each other in times of need and that we can be sensitive to the needs of our fellow colleagues.

For the TPN, the new season represents an opportunity to renew our strategic plan and align our actions for the next calendar year.

In short, we will be supporting the growth of the sector through our input into the strategic plan; we will provide regular communications to our members and support for their initiatives that align with the TPN's; and we will, of course, be looking at ways to provide input into community outreach and in particular provide stimulus to the education sector.

As we quickly head towards the festive season may our thoughts be with those loved ones, friends and colleagues who will feel the pain of loss from the recent helicopter incident. On behalf of the TPN I wish all a wonderful Christmas and a safe and prosperous New Year.

All the best.

John Brennan

Chairman, TPN

Plans for the Antarctic Centennial Year (ACY) are well advanced, with strong support from all sectors of the Antarctic community. The key dates are:

May 2011

- Official Launch of the Antarctic Centennial Year
- The International Association of Antarctic Tour Operators Conference
- The Extreme Environment Photographic Exhibition

June 2011

- The ANARE Club Midwinter Dinner
- The Longest Night Film Festival

August 2011

- The Philip Law Memorial Lecture
- Science Week in Tasmania
- The 3rd International Forum on the Sub-Antarctic

October 2011

- The 30th Anniversary Meeting of CCAMLR

December 2011

- Launch of the 'Australia in Antarctica' - Centenary exhibition of the 1911-1914 Australasian Antarctic Expedition at the Tasmanian Museum & Art Gallery
- The Mawson's Huts Foundation fund-raising dinner at the Hotel Grand Chancellor
- Departure of the Antarctic Cruise Ships for Commonwealth Bay
- The Centennial Flotilla of Ships to mark the 100th anniversary of Douglas Mawson's departure

March 2012

- The Amundsen Centennial - a public re-enactment of the Norwegian explorer's announcement in Hobart that he had reached the South Pole

- The International Polar Heritage Committee Conference in Hobart

June 2012

- The 35th Antarctic Treaty Consultative Meeting
- The AAD/ANARE Club Midwinter Dinner
- The Longest Night Film Festival
- 'Do Not Go Gentle' at the Theatre Royal

Many more events are proposed in a very busy program for the ACY - Tasmania's celebration of our enduring endeavour in the Antarctic. These will be added to the calendar as they are confirmed. For further information, contact Paul Cullen at Antarctic Tasmania, Science and Research. Telephone: 03 6233 3170 or email: paul.cullen@development.tas.gov.au



Australian Government

NATIONAL
ARCHIVES
OF AUSTRALIA

Your story, our history

National Archives and Antarctic Division join forces in new exhibition

On 2 December 1911 (Sir) Douglas Mawson and his team of Australian and New Zealand scientists and adventurers set off from Hobart to investigate and record the unmapped coast and interior of Antarctica between longitude 90 and 158 degrees east.

This expedition, and the subsequent BANZARE (British Australian New Zealand Antarctic Research Expeditions) expeditions of 1929–31, created an enduring legacy of Australia's special relationship with Antarctica, through heroism, innovation and scientific endeavour.

To honour this legacy, the National Archives of Australia and the Australian Antarctic Division are preparing an exhibition and public programs that will provide a contemporary interpretation of Antarctica and its importance for Australians today and in the future. State museums in Tasmania, South Australia and Western Australia are supporting this project.

The new exhibition will be launched at the Tasmanian Museum and Art Gallery on 2 December 2011, exactly 100 years after Mawson's expedition departed Hobart. From there, the exhibition will tour nationally until 2014.

National Archives Exhibition Curator Jane Macknight is working hard to draw together the many threads that make up the story of Australia's involvement in Antarctica. To date she has explored some of the voluminous correspondence files and archival records underpinning the later Mawson-led BANZARE expeditions. In the process, she's even coined a new term: bureaucratic exploration. Next she will examine records on the creation of ANARE (Australian National Antarctic Research Expeditions), as well as some of its 700 films, which have recently been the focus of a film preservation project at the Archives.

While bureaucratic exploration is under way, the exhibition development team led by Caroline Webber at the National Archives will investigate different ways of presenting the experiences gained and the knowledge and understanding generated through Australia's involvement in Antarctica.



*Bringing in a collection of frozen Adelie penguins, Mertz, Hunter and Nimis 1912
Attributed to Archibald Lang McLean 1850-1920
Charles Francis Laseron Collection, NAA: M584, 10*

Collections will be mined for objects and stories which inspire awe as well as understanding. Technological innovation will be examined not only in terms of what it brings to Antarctic scientific exploration and logistical operations, but also in respect of interpretive approaches for the exhibition. Scientific achievements will be presented in terms of their impact globally.

The exhibition will traverse the mundane yet often delightful stories of daily life in Antarctica; the attempts to understand and record Antarctica through personal diaries, literature and the visual arts; the impact of international diplomacy on the most peaceful yet inhospitable place on earth; right through to the 'wow' moments of science.

This exhibition will explore the enigma that is Antarctica and its special significance for Australia and Australians.

If you have stories about Antarctica or topics you would like addressed in the exhibition, contact Project Manager Caroline Webber at caroline.webber@naa.gov.au.

For other event information, visit centenary.antarctica.gov.au



*One of the thousands of Antarctic images in the National Archives collection, captioned Carrying ice cores to ice core pits, Antarctica
Department of Trade Photograph, undated
NAA: B4498, 193E1*

Ocean monitoring sought and supplied



John Church with book.

The authors of a new book have called for the development of more robust international ocean and ice sheet monitoring and modelling programs designed to help community adaptation planning keep pace with the threat of rising sea levels. At the same time, Australian scientists are preparing to use the data from a new \$22m array of high-tech equipment to help them probe deeper into the nation's surrounding oceans.

The focus on ocean observations coincided with the Australia-New Zealand Climate Forum, a conference of more than 200 climate scientists who met in Hobart in mid-October.

The 420-page book: *Understanding Sea-level Rise and Variability*, is the work of more than 90 scientists from 13 nations, led by Hobart scientist, CSIRO's Dr John Church, Dr Philip Woodworth from the Proudman Oceanographic Laboratory UK, Dr Thorkild Aarup from the Intergovernmental Oceanographic Commission (IOC), and Dr Stan Wilson from the US National Oceanic and Atmospheric Administration.

The good news is that a recent concentration of science resources is improving our insight into ocean and ice dynamics, and scientific measurement of the rate of sea-level rise," says the book's lead editor, CSIRO Fellow and oceanographer Dr John Church.

The way the world responds to climate change will become increasingly reliant on a sophisticated integrated atmosphere, ocean and ice observing network generating data on future climates and from which global and regional sea-level rise can be projected.

The key question is where and how sea-level rise and associated extreme events will have their impact," Dr Church says.

The book provides a comprehensive overview of current knowledge on the science of sea-level rise, identifies the major impacts, assesses past sea-level change and the factors contributing to sea-level rise, and assesses how extreme events at the coast will change.

Dr Church says coastal development has accelerated over the past 50 years. Many of the world's megacities are situated at the coast and new infrastructure worth billions of dollars is being constructed. These developments assume that the stable sea levels of the past several millennia will continue. This assumption is no longer true.

Populations in low lying islands and deltaic regions are particularly at risk. Our knowledge has improved significantly since satellites were launched to observe the ocean and the ice sheets and robots deployed to explore the oceans. However, there are critical gaps in observations of the deep ocean, glaciers and ice sheets.

Paralleling this, the development of computer simulations projecting ocean and ice sheet dynamics will be the tools that science needs, governments will rely on and coastal communities from the Pacific islands to the river deltas of Asia will be demanding.

We cannot ignore sea-level change because it has the potential to change forever the crowded coastal fringes of our continents," Dr Church says.

The book was initiated by the World Climate Research Programme and IOC shortly after Hurricane Katrina in 2005, but before cyclones Sidr and Nargis in 2007 and 2008. All claimed thousands of lives.



Ocean glider recovery at CSIRO, Hobart.

*Weather buoy rides a wave in the Southern Ocean.
Credit Eric Schulz.*



Closer to home, Australian scientists are preparing to use the data from a new \$22m array of high-tech equipment to help them probe deeper into the nation's surrounding oceans.

The new technology is part of a vastly improved set of tools provided by the Australian Integrated Marine Observing System (IMOS), based at the University of Tasmania, to study the open ocean

"What is happening in the open ocean is vitally important to all Australians and their understanding of local and regional climate," says IMOS Director, Tim Moltmann. "It drives our climate and weather extremes, is the workplace for offshore industries and maritime defence activities and contains a diversity of marine life that currently is barely described.

We need to observe this part of the earth system to understand how it's changing, and what the impacts might be on current and future generations of Australians."

Carrying out research in harsh, remote regions of the planet is extremely challenging, and technology plays an increasingly important role.

The open ocean observing array will include:

- Autonomous profiling floats that 'sense' breaks in the sea ice to transmit their data.
- Marine mammals equipped with satellite tags.
- Underwater gliders that spend months at sea, controlled by land-based 'pilots'.
- Huge moorings engineered to withstand some of the wildest ocean conditions.

Mr Moltmann said IMOS brings together ocean and climate scientists from research institutions across the nation, including the University of Tasmania, CSIRO, Australian Antarctic Division, Bureau of Meteorology, Australian Institute of Marine Science, Sydney Institute of Marine Science, and University of Western Australia.

A feature is continued collaboration with northern hemisphere partners, including the United States, France, the United Kingdom, and Korea.

Hobart-based CSIRO oceanographer and leader of the IMOS ocean and climate node, Dr Susan Wijffels, says IMOS is helping to foster a new era of cooperation between scientific disciplines that have not traditionally worked together. "This is a unique approach to monitoring the linkage between the physical properties of oceans, such as temperature and salinity, and how they influence the marine ecosystem," Dr Wijffels says.

In the 2009 Federal Budget, IMOS received additional funding as part of a Marine and Climate Super Science Initiative. Particular emphasis is being placed on enhanced monitoring in the Southern Ocean and in northern Australian waters.

IMOS is supported by the Australian Government, through the National Collaborative Infrastructure Strategy and the Super Science Initiative. It is led by the University of Tasmania on behalf of the Australian marine and climate science community.

*Elephant seal with a satellite tag. Credit
Chris Oosthuizen.*

*Photos and text courtesy Craig Macaulay,
CSIRO.*



Russia in Antarctica



While Australia will celebrate the Centenary of Mawson's expedition to Antarctica in 2011, Russia has this year marked the '190th Anniversary of the Russian discovery and circumnavigation of Antarctica' by Captain Bellingshausen on the Vostok, and Lieutenant Lazarev on the Mirny sloops in 1819-1821. This expedition to the southern high latitudes was part of an ambitious plan of the Russian Imperial Government to approach as closely as possible to the South Pole 'to discover new lands'.

The expedition returned to St Petersburg in July 1821 and Bellingshausen's report of his voyage was only published in St Petersburg ten years later without generating any particular interest. For many decades, Bellingshausen's report was all but forgotten. Only in 1899, when the International Geographical Conference held a meeting in Berlin, which discussed proposals for Antarctic research, was Bellingshausen's voyage remembered. His report was translated into German and published in Leipzig in 1902, which made it available to western readers.

An English translation of the report appeared during World War II, which was ultimately edited by the Australian born Director of the Scott Polar Research Institute in Cambridge, Professor Frank Debenham. It was published by the Hakluyt Society in London in 1945 and can be found in both the Australian Antarctic Division Library and the State Library of Tasmania, titled 'The Voyage of Captain Bellingshausen to the Antarctic Seas 1819 – 1821.' In his introduction, Debenham notes that Bellingshausen's 'first real reward in the discovery of new land, the island which he named after Peter the Great was the first time that land had ever been seen within the Antarctic Circle'.

He continues that Bellingshausen 'describes very clearly the appearance of land [the mainland of the Antarctic continent] without claiming it as such'. According to Antarctic historian Dr. Hugh Robert Mill, the Russian Antarctic expedition was 'one of the greatest Antarctic expeditions on record, a voyage well worthy of being placed beside that of Cook'.

However, the almost simultaneous sightings of the continent by the English naval Master Edward Bransfield, the American Captain Nathaniel Palmer, and the Russian Faddei Bellingshausen led to the three countries involved claiming that their seafarers were the first to discover the new continent.

The Russian Historical Society in Australia, founded in 1994, initiated the commemoration of the 190th Anniversary of the first Russian expedition to Antarctica in Australia. The Society issued a commemorative medal (designed by Peter and Kyra Tatarinoff) to commemorate the event. An exhibition dedicated to the Anniversary was organized in the Russian Embassy in Canberra in June and in Sydney in November this year. By supporting the commemoration of the expedition in both Russia and Australia, the Russian government has demonstrated its continuing interest in the south polar region, which is seen as one of the essential components of foreign policy of any country that seeks to play an active role in contemporary world politics.

Although funding support for the Russian Antarctic expedition decreased dramatically after the breakup of the Soviet Union, the improving economy has allowed the Russian government to adopt a new "Strategy for the development of activities of the Russian Federation in Antarctica till 2020 and beyond" in October this year.

It has decided to allocate AU\$200 million for its Antarctic programs up to 2013 and a further AU\$800 million till 2020, 'depending on the economy'. The new strategy will allow the upgrading and reconstruction of Russian Antarctic stations; the construction of five new scientific research vessels and of a new wheel/ski equipped airplane based on the IL 114-100T cargo aircraft.

Alexander Frolov, Deputy Director of the Russian Hydrometeorology and Environment Service (Roshydromet) which is responsible for the Russian Antarctic program, believes that this strategy has political ramifications and identifies the main priorities of the activities of the Russian Federation in Antarctica: strengthening the Russian presence; developing infrastructure; and providing additional logistic support for science, aerospace activity and fisheries.

Together with other ministries and the Academy of Sciences, Roshydromet plans to develop and expand the Russian Antarctic program. Frolov, while attending the First All Russian conference on applied oceanography held on 26-28 October 2010 at the State Oceanographic Institute in Moscow, gave further details of the Antarctic strategy to the participants of the conference. He touched on plans to convert one of the summer field camps into a year round station, thus increasing the number of permanent Russian stations to six.

The majority of Russian Antarctic stations and field camps are situated in the Australian Antarctic Territory (AAT), including three year round stations Mirny, Progress and Vostok and three field camps Molodezhnaya, Druzhnaya-4 and Soyuz.

Oktokopter observations



A newly developed, remote control helicopter, called the Oktokopter, will map fragile coastal moss beds at Casey Station this summer. The eight rotor helicopter, about 20 times smaller than a real helicopter, was built in Germany but adapted for the Antarctic project by Dr Arko Lucieer and Darren Turner from the University of Tasmania, in collaboration with the AAD.

It is equipped with visible colour, near-infrared and thermal infrared cameras and an autopilot system for flying to pre-programmed GPS waypoints. Sensors will monitor the impact of temperature changes, wind speed and UV-B radiation on moss beds, where distinct die-back areas have been observed.

The Oktokopter will help scientists determine which terrain is supporting the healthiest mosses.

All photos courtesy Wendy Pyper, AAD.

Regular voyages of the Akademik Fedorov (Russian Antarctic Expedition) and the Akademik Alexander Karpinsky of the Polar and Marine Geological Prospecting Expedition (Federal Agency for Exploitation of Mineral Resources) conduct oceanographic, geological and geophysical research in the Southern Ocean.

The Russian Antarctic Expedition has indicated that it may be interested in calling in to an Australian port for refuelling and taking on provisions in those seasons when the Russian vessels are scheduled to circumnavigate the Antarctic continent, which is every second year.

The Hon Stephen Smith MP, Australian Minister for Foreign Affairs and Trade, visited Moscow in April this year for a meeting with the Russian Foreign Minister Sergey Lavrov. Among a wide range of topics, arrangements covering Antarctic cooperation were discussed. This is in line with the Australian Antarctic science strategic plan 2011–12 to 2020–21 in which 'high priority' is placed 'on collaboration across the Australian and international research communities'.

If discussions planned for November this year lead to the signing of a Memorandum of Understanding on Antarctic cooperation, it will provide Australia and Hobart's Antarctic community in particular, the opportunity to further expand and develop Hobart's role as a gateway to Antarctica.

Irina Gan

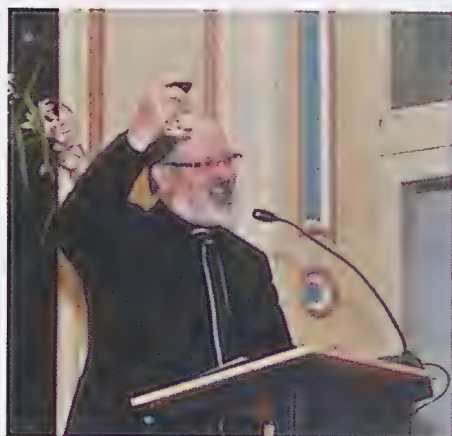
Russian Translator/Liaison

Coin photos courtesy Irina Gan.



Antarctic season launch

The Hobart City Council was pleased to host a special reception on October 15 in the Town Hall for Antarctic expeditioners, scientists and personnel to celebrate the city's connection with the Antarctic and the departure of expeditioners for the upcoming summer season.



As a Council, we wanted to celebrate the success of Australia's Antarctic program based in our City. The reception aimed to highlight the importance of the Antarctic sector and to help establish a greater awareness of Antarctica in the minds of the Tasmanian community.

Importantly, the Council also wanted to celebrate the achievements of those men and women who have been south to Antarctica in the past and will be going south this season.

On the night, I was joined by The Premier, The Hon David Bartlett MP, the Director of the Australian Antarctic Division, Lyn Maddock and the Head of Polar Logistics at Institut Polaire Française, Patrice Godon, to speak on the importance of the Antarctic sector to Hobart and Tasmania.

*Top-left: Lord Mayor Rob Valentine
Top-center: Premier David Bartlett
Top-right: TPN Chairman John Brennan*

Photos: Llabos Pavlidis, L P Photography



The evening was enjoyed by members of the Tasmanian Polar Network, together with personnel from the Australian Antarctic Division, the Antarctic Tasmania Science and Research unit of the Tasmanian Government and the University of Tasmania through the Institute of Marine and Antarctic Studies (IMAS).

Importantly, the reception also hosted personnel from the French Antarctic program, who operate from our port.

Through the Council's community consultation we know that our position as an Antarctic gateway is something which is very important to the people of our City.

Our community has said how important it is to them to be able to see the Aurora Australis, L'Astrolabe and other Antarctic related vessels berthed at the wharves – it reinforces the notion of the role that Hobart plays.

As the closest port to east Antarctica, it is believed Hobart has the highest number of scientists per capita of any Australian city and hosts 65 per cent of all the nation's Antarctic and Southern Ocean research scientists; this is very significant for our City.



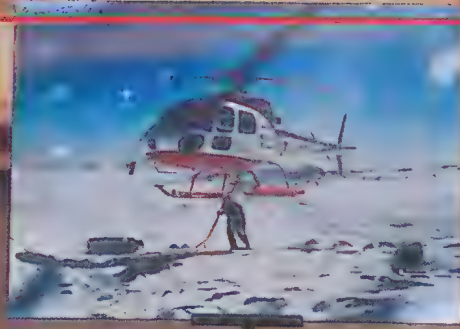
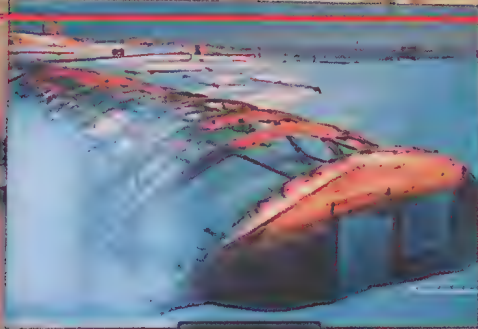
By holding the Antarctic Reception, the Council is reinforcing the importance of the Antarctic sector to our community and we hope that it will become an annual event.

We look forward as a Council to the future in raising the profile of the Antarctic in conjunction with our neighbouring Councils that are also significant stakeholders.

Alderman Rob Valentine

Lord Mayor





Lord Mayor Rob Valentine chose the right day. With snowy weather predicted, he selected October 15 for the launch of the 2010-2011 Antarctic season.



The Hobart City Council's reception to mark the beginning of voyages and flights to Antarctica was held in the Town Hall. The room was decorated with Antarctic photos, candles and bunches of silver balloons. Videos of the Airbus A319 landing at Wilkins Aerodrome and helicopter views of Antarctica were screened on the stage.

On arrival, guests were provided with drinks and savouries while a string quartet provided a musical accompaniment.



Guests from a wide variety of Antarctic-related activities attended, including the Honorary Antarctic Ambassador, Sir Guy Green; the Mayors of Kingborough and Glenorchy; UTAS and Australian Antarctic Division staff, as well as expeditioners and business members of the Tasmanian Polar Network.



The occasion was MC'd by John Brennan, Chairman of the Tasmanian Polar Network, who introduced the Lord Mayor. He welcomed guests to the inaugural reception and said:

"By holding the Antarctic Reception, the Council is reinforcing the importance of the Antarctic sector to our community and we hope that it will become an annual event,"

*Top-left: AAD Director, Lyn Maddock
Top-center (L-R): David Vaudrey, Scott Laughlin, Karen Westwood.
Top-right: "Strings on Fire" quartet
Left: Patrice Godon, IPEV
Centre (L-R): Richard Fader, Andrew Lee, Stephen Parodi*

Photos: Llabos Paulidis, L P Photography

John then introduced the Premier, David Bartlett, who is also the Minister for Innovation, Science and Technology.



"We are proud to be the home of the Australian Antarctic program, and host to the French Polar Institute's Antarctic gateway activities," said Mr Bartlett.

Lyn Maddock, Director of AAD and Patrice Godon, the Head of Polar Logistics at Institut Polaire Française, responded on behalf of the expeditioners due to leave for Antarctica.

The formal part of the evening was completed with toasts to the success of the next season.

Sadly, by the end of October, a French helicopter had crashed in Antarctica and four men lost their lives. Support was immediately offered to the French by the AAD and TPN.

For further information

Australian Antarctic Division
www.aad.gov.au

Tasmanian Polar Network
www.tpn.aq

CCAMLR concludes 29th Annual Session



The Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR), whose international headquarters is in Macquarie Street, Hobart, has just completed its annual, month-long series of meetings. Representatives from CCAMLR's 25 member countries, observing States, the fishing industry and from inter-governmental and non-government organisations, totalling approximately 200 people, participated in the meetings.

Over a period of two weeks starting in early October a working group of scientists met to consider the status and trends of fish stocks in the Southern Ocean. At the same time another working group reviewed standards and accreditation procedures for the deployment of scientific observers on all fishing vessels operating in the Southern Ocean.

The Commission commenced its annual meeting in the third week. It was opened by His Excellency Peter Underwood AC, Governor of Tasmania and chaired by Ambassador Don Mackay from New Zealand. During the first week of its meeting the Commission set time aside for a Scientific Committee to meet to consider the scientific advice provided by working groups that had met in the UK, South African and in Hobart throughout the year.

In addition to the advice on the status of harvested species, the Scientific Committee received advice on statistics and analytical methods that are applied in the assessments of precautionary catch limits for fish and krill and a range of ecosystem-related issues including the impact of bottom fishing in the Convention Area on vulnerable marine ecosystems. Related discussions concerned progress towards the establishment of a representative system of marine protected areas in the Southern Ocean.

At the same time as the Scientific Committee was meeting, separate meetings of an administration and finance committee and a compliance-related committee were also underway. In addition to considering finance matters associated with the operations of the CCAMLR Secretariat, the finance and administration committee discussed the Secretariat's strategic plan, its new 'greener office policy', cost recovery possibilities for the administration of fisheries and means by which to support engagement of developing States in the work of the Commission.

The compliance-related committee reviewed conservation measures previously adopted by the Commission with considerable attention given to issues associated with illegal, unregulated and un-reported (IUU) fishing in the Southern Ocean. This included efforts to identify responsible parties and the potential size of their catch.

The issue of IUU fishing in the Southern Ocean has been of significant concern to the Commission for more than a decade.

Current estimates are that up to seven vessels fished in contravention of CCAMLR's regulations in 2009/10 and that they caught up to 1,615 tonnes of valuable toothfish, including from some areas where the illegal catch far exceeded the legal catch limits.

Of increasing concern are reports that all of these vessels are reported to be deploying gillnets – a non-discriminatory fishing method that results in significantly broader ecosystem impacts particularly as any lost gear continues to 'ghost fish' long after the vessels have left the area.

In the final week, the Commission considered the advice provided by each of the Committees. It revised existing measures and adopted new measures governing the operations of fishing vessels and fisheries. Significant outcomes included a decision to extend scientific observer coverage in the krill fishery to not less than 50% of vessels in 2010/11 with each vessel to be observed at least once every 2 seasons, aligning this fishery closer to the 100% observer coverage required in all other CCAMLR fisheries.

Krill vessels will also now be required to participate fully in the Commission's satellite-based vessel monitoring system. Other measures related to limits in established and exploratory fisheries for icefish, toothfish and krill including the continuation of the apportioning of the krill catch among management units adopted in 2009, the regulation of bottom fishing activities, scientific research and processes for notifications associated with participation in a fishery.

Next year's annual meeting will mark CCAMLR's 30th anniversary.

Drew Wright

Executive Secretary, CCAMLR

Acronyms frequently used in Ice Breaker

AAD

Australian Antarctic Division

ACE CRC

Antarctic Climate and Ecosystems Cooperative Research Centre

AT

Antarctic Tasmania

CCAMLR

Commission for the Conservation of Antarctic Marine Living Resources



Polar News

Whale reprieve

Lead singer from the South African group The Lemmings has recorded a song called 'Voices from the Blue' in honour of whales, with some of the proceeds being donated to the International Fund for Animal Welfare's campaign to protect whales. This year's International Whaling Commission's proposal to lift the ban on commercial whaling failed because of objections from IFAW and other whale conservation groups.

Change of place

The Imaginarium Science Centre in Devonport will merge with a Jungle Jim play centre and a Lazerzone to become Pandemonium: the Devonport Discovery and Adventure Centre. Due to be opened before Christmas, the new centre is situated on North Fenton Street.

Hobart's new maritime and Antarctic venues

Plans for the University of Tasmania's new Institute of Marine and Antarctic Studies were revealed in September this year. The three-storey institute will replace the Princes Wharf No. 2 Shed on Hobart's waterfront. The ground floor will have a public exhibition area, with live video from Antarctica, and people will be able to check weather conditions at Antarctic station or track tagged seals and whales in real time.

The first stage of Prince's Wharf Shed No. 1's refurbishment was completed last month and ready for a series of events, including the Taste of Tasmania in December. Some of the stalls and trade tables for the Wooden Boat Festival in February next year will be housed in the Shed. The second redevelopment stage will occur from March to July, with a new fitout, outside decking and better facilities for other festivals.

If planning approval is granted, replicas of two of Mawson's Huts at Cape Denison, Antarctica, will be installed near Mawson Place in Hobart, in time for the centenary of the explorer's voyage to Antarctica late next year. Funding is being sought for the erection of the huts, which may remain in place for two years, before being relocated elsewhere on the waterfront. Chairman of the Mawson's Huts Foundation, David Jensen, considers the replicas to be an important tourist attraction and a reminder of the significance of Sir Douglas Mawson's contribution to Australia's territorial claims in Antarctica.

Macquarie Island losses

Three hundred birds from at least four species have perished from ingesting poison baits left to reduce rabbits and other rodents on the island. Poor weather conditions prevented helicopters dropping most of the bait and hunting has also been delayed.

Voyage plans

In 2012, Don McIntyre, from Ocean Frontiers in Tasmania, is planning to recreate Ernest Shackleton's rescue mission in an open boat, across the Southern Ocean. He recently completed Captain William Bligh's voyage across the Pacific in 1789.

CSIRO call

Free membership of CSIRO Alumni is now offered to all former staff and students. For more information, visit csirolumni.org.au

Ice bikes

Expeditioners at Casey or Davis Station now have the option to cycle from their accommodation blocks to work. Each station has two mountain bikes, equipped with panniers for tools, and they are a

popular alternative to quad bikes and utes for short journeys. If the trial is successful, more bikes will be sent down next summer.

Southern cruises

One of the companies offering Antarctic cruises this summer are Intrepid Travel, which offered a 19-day cruise on the Polar Star departing Ushuaia, Argentina on November 22, 2010. Also departing from Ushuaia is Cruisabout's MS Expedition with 11-day cruises during December 2010 and February 2011. Orion Expedition Cruises departs Dunedin, NZ in December 2010 for 18 nights to visit Mawson's huts. In addition, a 21-night cruise to visit Scott and Shackleton's bases will depart Hobart, Tasmania in January 2011. Heritage Expeditions is offering 28-day 'In the footsteps of Mawson' voyages during December 2010 and January 2011. Peregrine, World Expeditions and Silversea Expeditions are also advertising their Antarctic voyages.

Name links

With Mawson and Amundsen centenary events starting next year, a check was made of Tasmanian places that commemorate these early explorers. Warrane in Southern Tasmania has an Amundsen Crescent, and there is an Amundsen Street in Ravenswood in the north of the state. There is a Mawson Road near Somerset in the north-west and Mawson Place in Hobart.

Cool records

An ANARE oral history program is being trailed in Tasmania. Funding was secured from the ANARE Club national council to supply recording equipment, workshops to design appropriate question formats and record the histories effectively. If successful, the program will be extended throughout Australia.



Polar weather conference

EC-PORS Co Chairs, Greg Ayers, foreground, and David Grimes (Photo courtesy: Neil Gordon)

The Polar World came to Hobart in October

The World Meteorological Organization's (WMO) Executive Council Panel of Experts on Polar Observations, Research and Services (EC-PORS) held its second meeting in Hobart, Australia from October 18 – 20, 2010. The Panel's first meeting was held in Ottawa, Canada in October 2009.

What is EC-PORS?

EC-PORS is the body within the WMO that is responsible for the overall coordination of polar activities amongst WMO member countries. It was formed in 2009 in recognition by the WMO Congress and Executive Council of the need to globally coordinate the exchange of meteorological and other environmental data from the polar regions to research, monitor and predict the state of the polar atmosphere. The Panel continues the legacy of the enhanced polar monitoring and research systems that were developed during the 2007-2008 International Polar Year. Matters relating to the cryosphere of elevated areas in mid to low latitudes (snow caps, glaciers, etc.) are also considered by EC-PORS. This is sometimes referred to as the 'third pole'.

Panel Members

EC-PORS is composed of experts nominated by WMO member countries, including parties to the

Antarctic Treaty, that have active meteorological, hydrological and cryospheric programs in the polar regions. The Panel is presently co-chaired by Dr Greg Ayers of the Australian Bureau of Meteorology and Mr David Grimes from the Meteorological Service of Canada.

Experts from the following 16 countries currently participate in EC-PORS: Argentina, Australia, Canada, Chile, China, Finland, France, Germany, Iceland, Italy, New Zealand, Norway, Russian Federation, South Africa, United Kingdom and the United States of America. The European Space Agency and the International Arctic Social Sciences Association are also represented. Other countries may join EC-PORS as the Panel matures in scope and focus.

Outcomes sought from EC-PORS

The delivery of meteorological, hydrological and cryospheric services are key drivers for EC-PORS. For example, the polar service needs of the Council of Managers of National Antarctic Programs (COMNAP) and the Global Maritime Distress Safety System (GMDSS) guide the development of the EC-PORS work program. Underpinning the delivery of services are research and observations which are crucial to validating the research and serving operational needs.

Key Projects

EC-PORS is concentrating its efforts on:

- a 'Polar Prediction System' that delivers service focused products for polar regions to mitigate risks to people working in these areas;
- assessment of the concept of

an International Polar Decade (IPD) as a mechanism for fostering multi-disciplinary and multi-agency efforts to better understand polar issues in order to improve the effectiveness of a Polar Prediction System ; and

- a Global Cryospheric Watch, under which observations of the cryosphere (including tropical highland snow fields/glaciers) are made globally in a systematic manner in order to better monitor and characterise the effects of a changing environment on the Earth's frozen water.

Work Program

The Panel has established 3 Frameworks to advance its work in target areas: Services; Observations; and Research. A small team of Antarctic specialists continues to address matters related to telecommunications and monitoring networks given the unique nature of Antarctic governance.

Partnerships and Engagement

EC-PORS recognises that there is a wide range of groups, agencies and commissions that contribute to the welfare of people operating in polar areas and who seek to assess the impact of polar regions on global weather and climate. There is therefore a strong focus within EC-PORS in maintaining engagement, not only within the WMO system, but with the broader global services, operations, and research communities.

A reminder of the dangers of Antarctica Operations

To end the EC-PORS meeting in Hobart, during the early evening of Wednesday 20 October 2010, the delegates enjoyed a sail around the Derwent Estuary on the tall ship the Lady Nelson. During the sail delegates

New drifter buoys

Hobart based Metocean Services International (MSI) is pleased to advise its first sale of the recently secured agency of MetOcean Data Systems was to the Australian Antarctic Division (AAD) in Kingston. The AAD ordered two of the iSVP Iridium based drifter buoys for use in its extensive research program and these were delivered with Lithium batteries installed to increase the measurement duration of the buoys.

The iSVP is an innovative addition to the spherical drifter family and uses GPS to track ocean current as well as provide barometric data. Additional sensors available for the iSVP include salinity and wind speed & direction. The use of Iridium telemetry on the buoy ensures excellent satellite

coverage due to the extensive network of Iridium satellites, and also enables bi-directional communication with the buoy, allowing the reporting period to be changed remotely to preserve batteries, or to allow more efficient tracking and recovery when a vessel is in the area.

The iSVP is just one of many products in the impressive portfolio from MetOcean that MSI now offers in Australia. These include Polar Area Weather Stations, Self Locating Datum Marker Buoys, Oil and Current Tracking Buoys, Ice Mass Balance Buoys, Polar Ocean Profiling Systems and Iridium based submersible tracking beacons.

With offices in Australia & South Africa, and using state of the art



equipment, MSI provides professional, cost effective solutions in response to their clients' global requirements for accurate metocean information. In addition to MetOcean, MSI also exclusively represents RBR Ltd and AXYS Technologies in Australia. For further information or a full list of products offered by MSI, please visit www.metoceanservices.com or email stefan@metoceanservices.com.

Stefan Stimson

noted the French Antarctic re-supply ship L'Astrolabe was about to take on board two helicopters for the then upcoming re-supply of the French Antarctic station Dumont d'Urville. EC-PORS delegates express their deepest sympathy to the families; friends; and colleagues of the four expeditioners who lost their lives in the subsequent accident in Antarctica involving one of these helicopters.

The Importance of the Polar Regions

The north and south polar regions are the two heat sinks of the global climate system and play a crucial role in general circulations of the ocean and atmosphere. To play its vital role of radiating back to space the excess energy transported poleward from the overheated tropics, the high latitude atmosphere develops its own unique structure and weather systems that nonetheless are linked to the middle and lower latitudes in ways not yet fully understood. For example, recent work at the Antarctic Climate and Ecosystem Cooperative

Research Centre in Hobart, has shown an inverse relationship between rainfall over south western Australia and precipitation over the Antarctic. From the sea ice dominated high northern latitudes of the Arctic, the vast ice-covered content of Antarctica in the south, to the snow and ice capped elevated areas of mid and low latitudes, the scientific challenges of the weather and climate of frozen regions have always intrigued and inspired. For the past 130 years, the polar atmosphere has been studied by a band of dedicated polar scientists with a special effort every 50 years or so with a succession of Polar Years – culminating in the International Polar Year (IPY) in 2007-08 and now, the development of EC-PORS. The meteorological stations in polar areas have the fundamental purpose of providing weather observations for real-time numerical weather prediction on regional and global scales, as well as for the climate record. The need to understand polar systems is growing in importance. We continue to see accelerating changes in the environments of polar regions (such

as melting of permafrost), and an increasing number and complex needs of users (such as tourism and economic development). The retreat of glaciers, decline in arctic sea-ice and changes in the margins of Antarctica and Greenland all contribute to a body of evidence that supports the global warming trend and a need to understand global change. Meteorological, hydrological and cryospheric research, the operations that underpin this research and the services that the research supports, are vital to further develop our understanding of global ocean circulation, the carbon cycle, sea levels and weather patterns. This understanding is vital for the safety of operations in the polar regions, the wellbeing of the human populations of the Arctic, and the benefit of the global community and environment.

Steve Pendlebury, Cherie Stitz, Jon Gill, and Valentina Lazarevska

Australian Bureau of Meteorology



Tony Press

...significant changes to the geographic and seasonal patterns of rainfall

Climate Futures for Tasmania: An Australian first in climate change

Tasmania has used its unique assemblage of researchers, and its community networks to get on the front foot in understanding how climate change will affect the island state.

The first Climate Futures for Tasmania report, which was launched by the Tasmanian Minister for Climate Change, Nick McKim, on Tuesday 12 October 2010, charts the projected changes that climate change will bring to Tasmania out to the end of this century.

An Australian first, the report's fine-scale climate modelling gives Tasmania the jump on the rest of Australia (and most of the world) in having realistic climate change projections to inform decisions about the future.

The importance of the Climate Futures for Tasmania report cannot be underestimated. Global greenhouse gas emissions have already 'locked in' a general increase in temperature across Tasmania – but the emissions path the world is currently travelling brings Tasmania very close to the predicted 2.9 degrees Celsius increase in average annual temperature by the end of the century – this is a six-fold increase in the observed temperature increase over the last 50 years.

What is inevitable is that the past we know will not be the same the future we face. Decisions about major infrastructure investment or the course of agricultural development must be informed by well researched projections of future climate. That is the reality confronting all governments and communities.

Studies like Climate Futures for Tasmania should become the centrepiece of plans to adapt to climate change. They will provide a climate service to governments and the community in a similar way that weather forecasts do. Regular reanalyses and projections can then be made to take into account new information or better modelling to refine our views of the future. Adapting to climate change will be much harder without this.

From conception, it was designed to understand and integrate the impacts of climate change on Tasmania's weather, water catchments, agriculture and climate extremes. In the course of the project more than twice the amount of data that was used by the IPCC to model global climate was processed to model changes to Tasmanian climate. Six global climate models were 'downscaled' to a 10-kilometre grid over Tasmania, so that the detailed landscape could be taken into account in describing how the climate operates. The models were then tested against real climate data (for example, temperature, rainfall, humidity and evaporation) from detailed weather observations taken across Tasmania since 1960. The models realistically reflected the historical record and the scientists therefore have confidence in their ability to describe future changes.

In setting up the project a great deal of effort went in to discussing with 'end-users' what they wanted to know about climate change in their area of business, and what climate variables were important to them. The results of these discussions and ongoing dialogue between the scientists and the community means that Climate Futures for Tasmania will, from this point on, provide a series of specific reports covering diverse subjects such as impacts on agriculture; extreme tide and sea level events; severe wind and hazards; and water and catchments.

In this way, the results of the scientific modelling will be presented in a way that can be used to guide future decisions for specific areas of the Tasmanian economy. Not many climate modellers would have begun their research by using information about how to grow Pinot Noir in a scientific study of climate change, for example.

The Climate Futures for Tasmania research has found both winners and losers in its projections. One important finding is the fact that Tasmania, with its geographical location and maritime environment, is expected to warm less than the global average, and that projected for mainland Australia. And the regional changes projected for Tasmania mean that some areas will become more suitable for crops that cannot be grown at present. Lovers of Australian hearty reds may be pleased to know that Tasmania will become more suitable for growing Shiraz, and less for Pinot Noir. This doesn't mean that there won't be downsides: for example, the general increase in temperature and loss of rainfall in the central and north-western parts of Tasmania has implications across the economy, from farming and agriculture to power generation.

The study projects an average temperature rise for Tasmania of 2.9 degrees Celsius by 2100 under a high greenhouse gas emissions scenario (the path being tracked at present); and 1.6 degrees Celsius under a low greenhouse gas scenario.

Both the low and high end temperature changes are, on average, below the projected temperature rises around the globe.

Annual Tasmanian rainfall is expected to remain about the same as the observed average of the last 50 years, but climate change will bring significant changes to the geographic and seasonal patterns of rainfall.



Above: The setting sun highlights a thunderstorm near Port Hedland, Western Australia, 26 February 2009. Gusts of 93 km/h were recorded. Photograph: KATIE DAVIS. Below: Cloud edge rotation in a severe thunderstorm cell above Hornsby, north of Sydney, New South Wales, 24 January 2004. Photograph: ANDREW TRELOAR.



More rain is expected to fall in coastal regions of Tasmania, while the centre and northwest of Tasmania will become drier. And the complex interactions between temperature and rainfall will bring changes to other climate and weather variables such as evaporation: an important consideration for an economy which is tied so strongly to its ability to generate hydroelectric power.

In keeping with its focus on end users, Climate Futures for Tasmania was launched before an audience of 110 people from across the research, policy, government and industry communities of Tasmania.

The next step is to inform these groups of the results of the research, but more importantly, to discuss how the results can be used in responding to climate change.

The Climate Futures for Tasmania project was funded by a consortium of partners including the Australian and Tasmanian governments, and was carried out by scientists at the Antarctic Climate and Ecosystems Cooperative Research Centre at the University of Tasmania.

Tony Press

CEO, Antarctic Climate and Ecosystems Cooperative Research Centre

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Polar Publications

BOOK

Way Down North: Dene Life – Dene Land

By Rene Fumoleau
Published by Novalis
Price: \$29.95

A collection of photos showing the landscape and culture of Northern Canada over the four seasons.

BOOK

Inuit Education and Schools in the Eastern Arctic

By Heather McGregor
Published by UBC Press
Price: \$80.00

This is the first book about the development of education in the eastern Arctic region. It covers the educational challenges of the area such as policymaking and cultural negotiation during the traditional, colonial, territorial and local periods.

BOOK

Iceberg Tea

Annelies Pool
Prelude Books
Price: \$14.95

The author's collection of columns written about everyday life and unexpected encounters in a cabin near Yellowknife in the Northwest Territories of Canada.

NEW STAMPS

The Australian Territories Collection of Stamps 2010 includes Macquarie Island. Price: \$24.95 from Aus. Post.

BOOK

Still Life: Inside the Antarctic Huts of Scott and Shackleton

Antarctic Heritage Trust Director Nigel Watson) and NZ photographer Jane Ussher
Published by Murdoch Books
Price: \$79.95

A collection of Antarctic landscape photos and close-ups of these explorer's huts, together with essays about these conserved sites

BOOK

I am just going outside: Captain Oates – Antarctic Tragedy

By Michael Smith
Published by Spellmount Ltd
Price: \$24.00

A biography of Captain Oates, including his background and time in Antarctica, as well as his comments on Scott's second expedition. His diary and letters to his mother and sister are the basis of this book and the author also compares Scott's progress towards the South Pole to that of Amundsen's.

BOOK

Understanding Sea-level Rise and Variability

John Church et al
Published by Wiley, UK
Price: \$69.95

For information about this book, see Page 10



BOOK

Uumajut: Learn about Arctic Wildlife!

By Simon Awa et al
Published by Inhabit Media
Price: \$10.79

BOOK COLLECTION

Over 400 books and other Antarctic-related materials have recently been donated to TMAG by Rosemary Balmford from Melbourne. The collection will be housed in TMAG's library at its Rosny Collections and Research annexe. Researchers and the public will be able to access the material by appointment.

FILM

A trailer for Arctic Blast, the science-fiction disaster movie filmed in Tasmania last year, has been released. Although no Australian release date has been announced, the trailer can be seen on themercury.com.au

WEBINARS

Arctic Kingdom Polar Expeditions in Canada is offering free, hour-long webinars:

December 2, 2010 – Arctic Diving

December 8, 2010 – Bowhead Whales, Walrus and Polar Bears of Foxe Basin

December 12, 2010 – Bowhead Whales, Polar Bears and Glaciers of Baffin Island

For further details and registration, see arctickingdom.com

Ice Birds



Birgit Sattler

Born: 1969

Occupation: Limnologist (USA)

Notable Expeditions: Antarctica:

Dry Valleys, South Pole, Patriot Hills, Pecora Escarpment; Antarctic Peninsula; Svalbard; Greenland

Award: Wings 2008 Air and Space

Award- www.wingsworldquest.org

Websites: www.uibk.ac.at/ecology/staff/staff.html.en

Water Expedition

Ann Bancroft and Liv Arnesen will celebrate the 100th Anniversary of Roald Amundsen being the first man to reach the South Pole, by arranging an international of women to follow his route. The team of 6 women will start the expedition at the Bay of Whales in October 2011 and hope to reach the Pole in January 2012. The educational theme of the expedition will be Water – to draw attention to the current global water crisis. More details on YourExpedition.com



Erin Pettit

Born: 1971

Occupation: Glaciologist and educator (Austria)

Notable Expeditions: Antarctica: West Antarctic Divide, Siple Dome, Dry Valleys

Award: Wings Wings 2007 Earth

Award – www.wingsworldquest.org

Website: earthweb.ess.Washington.edu/lnk/peittit



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| | | | |
|---------|--------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14 | December | 2010 | TPN meeting 3.00pm CSIRO. Hobart, Tasmania |
| 27-29 | January | 2011 | History Workshop: Exploring Ice and Snow in the Cold War. Munich, Germany |
| 27-29 | March | 2011 | Arctic Science Summit Week. Seoul, Korea |
| 17-19 | May | 2011 | 5th Ukrainian International Antarctic Conference. National Antarctic Scientific Centre, Kyiv, Ukraine. Entitled 'Antarctica and Earth Global Systems: New Challenges and Outlooks. Email: uac@uac.gov.au |
| 14-15 | June | 2011 | 5th Malaysian International Seminar on Antarctica (MISA5). Kuala Lumpur, Malaysia. Held in conjunction with the 22nd Pacific Science Conference. Theme: Rapid Warming in the Polar Regions and its implications to the Pacific'. |
| 20 1 | June July | 2011- 2011 | ATCM XXXIV - CEP XV. Buenos Aires, Argentina. |
| 10-16 | July | 2011 | ISAES XI - 11th International Symposium on Antarctic Earth Sciences. Edinburgh, Scotland |

For further information, see www.environment.gov.au/about/media/events and www.scar.org/events

Antarctic Flights

| | | | | | |
|-----|----------|------|---------------|---------|-------------------------------------------------|
| 4-6 | December | 2010 | Basler T. DC3 | FB011CP | McMurdo to Casey, to Davis, to Novolazarevskaya |
| 9 | December | 2010 | C-212 | FC08,09 | Davis to Casey and return |
| 20 | December | 2010 | Airbus A319 | FA00A,B | Hobart to Wilkins Aerodrome and return |
| 20 | December | 2010 | C-212 | FC10,11 | Casey to Davis and return |
| 2 | January | 2011 | C-212 | FC12,13 | Davis to Mawson and return |
| 5 | January | 2011 | Airbus A319 | FA01A,B | Hobart to Wilkins Aerodrome and return |
| 11 | January | 2011 | Airbus A319 | FA02A,B | Hobart to Wilkins Aerodrome and return |
| 18 | January | 2011 | Airbus A319 | FA03A,B | Hobart to Wilkins Aerodrome and return |
| 20 | January | 2011 | Basler T. DC3 | FBO21CP | Casey To McMurdo |
| 24 | January | 2011 | C-212 | FC14 | Davis to Casey |
| 25 | January | 2011 | Airbus A319 | FA04A,B | Hobart to Wilkins Aerodrome and return |
| 1 | February | 2011 | Airbus A319 | FA05A,B | Hobart to Wilkins Aerodrome and return |
| 8 | February | 2011 | Airbus A319 | FA06A,B | Hobart to Wilkins Aerodrome and return |
| 15 | February | 2011 | C-212 | FC15 | Casey to Hobart |
| 15 | February | 2011 | Airbus A319 | FA07A,B | Hobart to Wilkins Aerodrome and return |
| 15 | February | 2011 | C-212 | FC16 | Casey to Hobart |
| 26 | February | 2011 | Airbus A319 | FA08A,B | Hobart to Wilkins Aerodrome and return |

Subject to change. Check www.aad.gov.au

Phillip Law Symposium

The Academy of Technological Sciences and Engineering (ATSE) hosted Going South: Phillip Law Commemorative Antarctic Science Symposium on September 15, at the Melbourne Exhibition and Convention Centre. The seminar commemorated the career and contribution of the late Sir Phillip Law AC CBE FAA FTSE, who was Director of the Australian Antarctic Division (AAD) from 1949 to 1966.

In addition, it overviewed Antarctic science and its relevance and importance to Australia. The seminar linked the ATSE Victorian and Tasmanian Divisions, with the Academy of Science, the Royal Society of Victoria and was supported by the AAD.



Ms Lyn Maddock, Director of AAD, officially opened the event. Speakers from Tasmania included Professors Pat Quilty, Mark Hindell and Gustaaf Hallegraeff (UTAS), Dr Tony Press (ACE CRC); Doctors John Gunn, Tony Worby, Steve Nichol and Tas van Ommen (AAD).

The first sessions were by Fred Elliot and Major Ian Toohill, ANARE Club Australia, and Pat Quilty, who spoke of Phillip Law's Antarctic contributions. The second session, by AAD staff, concerned aspects of Antarctic science and the effects of global warming. This continued after lunch with topics of marine ecosystems and ocean acidification. The last session concerned ice cores and climate changes.

Others participating in the seminar were Peter Laver, Vice President of ATSE, Professors John Zillman (Bureau of Meteorology), Marilyn Ball (ANU), Ian Simmonds (University of Melbourne) and Dr Graeme Pearman (Graeme Pearman Consulting). Closing comments were made by Barry Jones AO (pictured above).



Photos courtesy Sue Halliwell



Stamp covers courtesy Klaus Arne Pedersen



Shipping

| | | | | | |
|----------|---------------------|---------------|-------------------|----------|---------------------------------------------------|
| 1-3 | December | 2010 | L'Astrolabe | AST2 | Departs Hobart for Commonwealth Bay |
| 1 | December | 2010 | Aurora Australis | V1 | Departs Hobart for Casey Station |
| 3-4 | December | 2010 | Spirit of Enderby | T2 | Macquarie Island. |
| 8 | December | 2010 | Orion | T3 | Departs Hobart for Macquarie Island |
| 9-10 | December | 2010 | Spirit of Enderby | T2 | Arrives Bluff, NZ, departs for Macquarie Island |
| 9-10 | December | 2010 | L'Astrolabe | AST2 | Commonwealth Bay, Dumont D'Urville |
| 12 | December | 2010 | Orion | T3 | Macquarie Island |
| 10-18 | December | 2010 | Aurora Australis | V2 | Casey Station. |
| 15-16 | December | 2010 | Orion | T4 | Macquarie Island |
| 21-28 | December | 2010 | Orion | T3 | Arrives Dunedin, NZ, departs for Macquarie Island |
| 22-24 | December | 2010 | L'Astrolabe | AST3 | Arrives Hobart, departs for Dumont D'Urville |
| 27-29 | December | 2010 | Aurora Australis | MS | Arrives Hobart, departs for Marine Science |
| 30 24 | December January | 2010- 2011 | Aurora Australis | V2 V2 | Marine Science |
| 30 2 | December January | 2010- 2011 | L'Astrolabe | AST3 | Dumont D'Urville |
| 3-20 | January | 2011 | L'Astrolabe | AST3 | Marine Science |
| 3 | January | 2011 | Orion | T4 | Arrives Bluff, NZ |
| 4-7 | January | 2011 | Orion | T6 | Commonwealth Bay |
| 11 | January | 2011 | Orion | T6 | Macquarie Island |
| 13 | January | 2011 | Spirit of Enderby | T7 | Departs Dunedin for Macquarie island |
| 15 | January | 2011 | Orion | T6 | Arrives Dunedin, NZ, departs for Macquarie Island |
| 18 | January | 2011 | Spirit of Enderby | T7 | Macquarie Island |
| 21-23 | January | 2011 | L'Astrolabe | AST3 | Commonwealth Bay, Dumont D'Urville |
| 23 | January | 2011 | Orion | T8 | Macquarie Island |
| 27 | January | 2011 | Orion | T8 | Arrives Hobart |
| 29 | January | 2011 | L'Astrolabe | AST4 | Arrives Hobart |
| 1-3 | February | 2011 | Aurora Australis | V2 | Arrives Hobart, departs for Mawson Station |
| 5 | February | 2011 | Xuelong | THA1 | Departs Fremantle WA for Casey Station |
| 10-11 | February | 2011 | Spirit of Enderby | T7 | Arrives Bluff, NZ, departs for Macquarie Island |
| 16 | February | 2011 | Spirit of Enderby | T9 | Macquarie Island |
| 15-18 | February | 2011 | Xuelong | THA1 | Casey Station |
| 15-23 | February | 2011 | Aurora Australis | V3 | Mawson Station |
| 28 | February | 2011 | Xuelong | THA1 | Arrives Hobart |

For flight details, see Page 24

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